THE

HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

PUBLISHED EVERY WEDNESDAY,
BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE,
No. 6.] AND SOLD BY ALL BOOKSELLERS. [PRICE 1*d.*

ASSYRIA—NINEVEH.

THE TIGRIS NEAR NINEVEH.

ZOOLOGY.

THE zoology of Assyria is rich and extensive; but though its more prominent features have long been familiar to science, its more minute but not less interesting developments have not yet been thoroughly explored, especially in the mountains, the natural history of which is still almost unknown in detail.

Bats are numerous, as they are in all warm countries: the species are small, and the forms not very different from those common in Europe. A

hedgehog and a small shrew represent the *Insectivora*. The greater cats inhabit this region; the majestic lion, that emblem of the Assyrian monarchy, stalks over the midnight plains; the leopard is spread over the mountain region of Taurus, though it seems to be not abundant; and even the tiger, now rarely seen to the west of the Indus, yet lingers in these lofty fastnesses. Hyrcania, the region lying to the south of the Caspian Sea, was anciently famous for this formidable but beautiful animal, and we have modern evidence that it inhabits Mount Ararat. Tournefort states that the sides of this mountain, even almost up to the line of perpetual snow, are infested by tigers, and declares that he saw them within 700 yards of him.* According to the same authority, the young ones are caught in traps by the people around the base of the mountain, to be exhibited in shows of wild beasts through Persia. A hunting leopard, which seems to differ from the common maned species, is not uncommon in the lower part of the plains. It climbs trees with facility, notwithstanding the imperfect retractility of the claws. Three species of lynx are common, the Spanish lynx, the chaus, and the caracal. The last named is said to be trained for the chase, like the hunting leopard, and is believed to be the species indicated under the term "lynx" by the ancients. It chiefly inhabits woody districts.

The wolf is common in the mountains, but in the plains is replaced by an allied species, the Tartarian wolf. The jackal is abundant, and so is the fox. Like the wolf it is the European species that is met with in Taurus, but on the rivers a distinct species takes its place. The striped hyæna is common in all parts, creeping stealthily around the mounds and ruins that are so numerous; and prowling by night around the village burying-grounds for its obscene meal. Several species of bears, both black and brown, are ascribed to the Armenian and Koordish mountains. In the towns great numbers of dogs are seen, as through all Western Asia, of the breed commonly called the Bazaar-dog; they are protected and fed, sometimes at the public expense, in spite of the Moslem prejudice which counts the touch of a dog a defilement. The Turkoman watch-dog, "a large, rugged, fierce race, equalling the wolf in stature, shaped like the Irish greyhound, and with equally powerful jaws,"—with erect ears, bushy tail, and rufous hair,—is the common attendant of the herdsmen.

Many species of the weasel family, as the ratel, the sable, and the genet, the ichneumon, the polecat, and the marten, occur in greater or less abundance, chiefly in the higher districts; and an otter inhabits the large rivers.

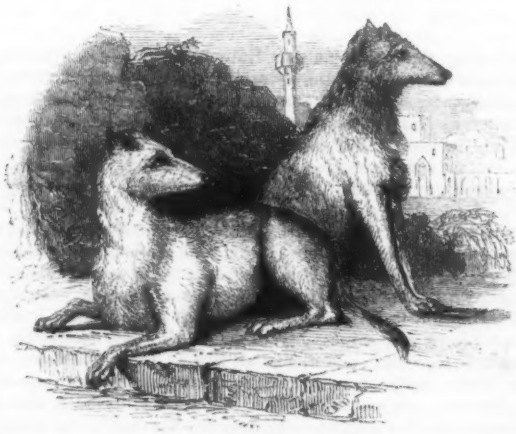
The order Rodentia is, more than any other, characteristic of these regions, though the species are not yet properly identified. They include rats and mice, dormice, marmots of several genera, which, with squirrels, tenant the elevated forests, while the plains teem with those leaping rats, called jerboas and gerbills, of many kinds, which in their figure, proportions, and motions resemble the kangaroos of Australia. The mole-rat, a curious animal, almost shapeless, and totally blind, burrows abundantly in the plains of Koordistan. Two kinds of hare and a rabbit also are found here; the beaver inhabits the larger rivers, and the porcupine is common in waste and ruined places. This is probably the animal rendered "bittern" in our version, which, it was predicted, should possess ruined Nineveh, as well as Babylon and Bozrah. (Zeph. ii. 14; Isa. xiv. 23; xxxiv. 11.)

* Morier mentions among the wild animals of Ararat, bears, small tigers lynxes, and lions.

Wild boars are abundant, especially in the valleys, and in the vicinity of cultivation, often doing great damage, not only by devouring, but by rooting up and trampling under foot, the crops. A wild horse, mule-like in form, of a yellowish-bay hue, scours the plains, as does also the wild ass; both are so fleet as to be with difficulty taken. Mr. Morier thus describes the appearance of the latter:—"On the desert . . . . in the grey of the morning, we gave chase to two wild asses, which had so much the speed of our horses, that when they had got at some distance, they stood still and looked behind at us, snorting with their noses in the air, as if in contempt of our endeavours to catch them. The Persians sometimes succeed in killing them, but not without great dexterity and knowledge of their haunts. To effect this, they place relays of horsemen and dogs upon the track which they are known to pursue, and then hunt them toward the relays, when the fresh dogs and horses are started upon the half-exhausted animal."

There are two breeds of both the horse and the ass in a state of domestication; of the former, the elegant and swift Arab, and the stouter Turkoman; of the latter, the common Oriental ass, larger and nobler than ours, and the long-bodied Damascus breed. The northern camel with two humps, and the Arabian camel with one, are both bred.

Several varieties of the Bovine races are common to the country, including, besides the ordinary breeds of kine, the humped species, and the buffalo. The great-tailed Tartarian sheep and the Bedouin sheep represent the tame breeds of these useful animals, and there is a wild sheep in the mountains.



THE BAZAAR DOG.

Three beautiful sorts of goat exist, including the fine-woolled Angora goat; and the impregnable rocky heights of Koordistan and Taurus are the home of at least three species of Ibex which are so often represented in the Assyrian sculptures, and whose enormous knotted horns, the trophies of the chase, are used to adorn the houses of the hardy mountaineers in these districts.

All the kinds of deer which we know in this country occur in the northern parts of Assyria, the stag, the fallow-deer, and the roebuck; the two former are represented in the bas-reliefs. The gazelle, the emblem of female elegance and beauty, ranges the plains, and another antelope replaces it in the mountains.

Ibex.

In ornithology the resemblance to European forms is so great, especially in the northern districts, that the naturalist would scarcely believe, but for a few unfamiliar types, that he was not among the feathered songsters of his own country; the majority, even of the species, being absolutely the same. Thus the osprey, kite, kestrel and gentle falcon; the griffon and Egyptian vulture; the passerine, barn and eagle owls; the raven, carrion-crow, hooded-crow, jackdaw, magpie, and oriole; the song-thrush, blackbird, ring-ouzel, missel-thrush, and water-ouzel; the warblers, fire-crest wrens, chats, wagtails, larks, tits, buntings, sparrows, and finches; the cuckoo, the woodpecker, the wryneck, and the hoopoe; the bee-eater: the nightjar; the Barbary dove and the turtle; the wood pigeon, and the domestic pigeon; the red-legged Barbary, and common partridges; the quail; the pheasant (wild in its native region); the great bustard; the plovers, sandpipers and snipes, herons and rails; the ducks and grebes; are all common European, and almost all British, birds, and these constitute nearly the whole ornithology recorded as characterizing this region.

It has, however, some peculiarities. The ostrich, formerly abundant on the arid deserts of Mesopotamia and Assyria, has not quite disappeared; at least if we may credit the testimony of Herbert, who says that he saw ostriches in the plains between Lar and Schiraz. Mr. Ainsworth also implies that it still exists, though rare. Its occurrence in the mythological bas-reliefs of Nineveh proves that it was familiar to the ancient Assyrians. A starling of much brilliancy of plumage, a blue-headed bee-eater, three species of kingfisher, and several of the doves, are peculiar. The Pterocles arenarius, and the Syrrhaptes paradoxus, birds allied to the partridges,

but presenting curious anomalies of structure, occur in the plains, the former in flocks of associated millions. There is a distinct kind of pheasant in the forests, and some of the bustards are peculiar. The beautiful Sultana of North Africa is common on the broad rivers, as is the large white pelican.

Reptiles, according to Mr. Ainsworth, are numerous. Two species of land-tortoise occur on the plains, one of which resembles Testudo Græca: two kinds of marsh-tortoise are found in the Euphrates, and are probably common to the Tigris also. Among ruins three species of gecko have been noticed, and the common chameleon is found in sheltered woods. In the open country the lizard and iguana families prevail, with many forms of the serpent races. Wherever rock, clay, or sand has the slightest tendency to vegetation, there insects prosper, and lizards make their appearance. The fundamental forms assumed in the plains are large bodies and big heads, with a skin lubricated and defended from the sun by a natural exudation. The narrow, smooth, and long forms of lizards do not prosper on sterile and arid spots. Agamas of the same species, reappear at intervals over large tracts of country, and they furnish on these plains nourishment to various mammalia and birds. It appears also that the numerous large non-venomous serpents which frequent these plains are fed by these insectivorous lizards. Vipers and snakes confine themselves more to the small *Rodentia*.*

The immense numbers of small lizards found in these and the surrounding regions have been noticed by many travellers. Major Skinner, speaking of the desert of Syria, observes:—"The ground is teeming with lizards; the sun seems to draw them from the earth; for sometimes, when I have fixed my eye upon one spot, I have fancied that the sands were getting into life, so many of these creatures at once crept from their holes." Bruce is still more explicit:—"I am positive that I can say without exaggeration, that the number I saw one day, in the great court of the Temple of the Sun at Baalbec, amounted to many thousands: the ground, the walls, the stones of the ruined buildings, were covered with them; and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping and basking."

Little seems recorded concerning the fishes of Assyria; though doubtless the rivers and mountain streams are well supplied. Most of those which have been recognised belong to the great carp tribe, or to some of its sub-genera. The barbel, the chub, and the loach are mentioned; the binny or scaly carp, a fine fish much esteemed, is abundant, as it is throughout Western Asia. The celebrated black-fish is stated by Mr Ainsworth to be of the Silure family, which is also represented by other species in these waters. Trout are common in the mountain streams.

Insects are numerous, but still require investigation. Among the beetles, of which two hundred species were collected by Dr. Helfer after the rains, many genera, supposed to be peculiar to the northern and temperate parts of Europe, occur. Such are the brachelytrous beetles, seven hundred species of which belong to Britain, and of which our common black rove-beetle, or cock-tail, is a familiar example; of these, forty species were met with. *Carabus Hemprishei* is one of the most common insects of the plains. In spring the Heteromerous division of beetles is characteristic of the region, especially the Melastomata, of which our common churchyard beetle is an example. Weevils and lady-birds are in considerable abundance: the chafers are rather scarce, with the exception of the little genus Aphodius

* Ainsworth's Assyria, &c., p. 45.

(small dung-chafers common in our pastures in spring), which occurs at certain seasons in swarming flights like locusts. Locusts and grasshoppers of many kinds are abundant during the dry months. Many fine butterflies are peculiar to this region, and some are shared in common with Europe; others are Indian types. Dragon-flies and other laced-winged flies are numerous along the borders of the rivers. Bees, wasps, ants, flies, and gnats, are also common; and parasitic insects swarm in the filthy huts of the inhabitants to a degree hardly imaginable by an untravelled European.

The climate, as might be supposed from the nature of the country, its elevation, and its distance from the sea, is marked by great extremes of heat and cold, and by absence of moisture. In the mountains there is a great accumulation of snow during the winter, which remains long after vegetation has commenced in spring. The influence of warm days and cold frosty nights in spring is to form vegetation, and yet preserve the snow. In crossing the Marash hills (near the head of the Tigris), in February, Mr. Ainsworth found the snow from two to three feet deep, and so hard as to bear a horse; yet in occasional bare spots, crocuses were in flower, and spiders were running about. At the same time, in sheltered valleys, Daphnes, Euphorbias, and bright and various coloured anemones, were in full bloom. The summer heat is often excessive in these valleys, from the radiation and reflection of the sun's rays.

In the plains also there are considerable variations of temperature. "From the Mediterranean to the Tigris there is an increase of cold in the same parallels, from west to east. . .This is not the case, however, in the plains east of the Tigris, which, sheltered by the Koordish mountains, have a more temperate winter. The influence of Taurus, clad for so many months with snow, is considerable in reducing the winter temperature; and on the plains of North Syria and of Mesopotamia, from the want of protecting hills, causes the vegetation to be in reality less southern than that of Sicily and Andalusia. At the same time, the long extent of littoral mountains, Ananus, Casius, and Lebanon, add to these unfavourable circumstances by impeding the passage of mild air from the Mediterranean. Notwithstanding these circumstances, the direct heat of the sun, increased by radiation and equality of level, is almost without a moderating influence, for evaporation is nearly null, and hence, where the winter temperature is so low, the summer heats are intense."* The traveller whom we are citing states that, in the month of August, the thermometer was observed as high as 115° (Fahr.) in the shade, and in winter as low as 12°, which gives an annual range of temperature of more than 100°.

To these excessive variations of temperature, and to the proximity of lofty snow-covered ranges of mountains, it is probably owing that this region is subject to sudden tempests which rage with terrific violence. The Exploring Expedition was caught unawares in one of these tornados, and before a place of shelter could be gained, one of the steamers was overwhelmed and sunk, with the greater part of her brave crew. The atmosphere, during its brief but terrible continuance, was so darkened, that though the vessel was within a short distance of the river's bank, several persons who could swim are believed to have been drowned, from not knowing in what direction to make for the shore.

We shall conclude our observations on the physical characteristics of this region by a vivid picture of the Assyrian plains at two seasons of the year, sketched by the accomplished Mr. Layard.

* Ainsworth's Assyria, &c., p. 31.

"The middle of March in Mesopotamia is the brightest epoch of spring. A new change had come over the face of the plain of Nimroud. Its pasture lands, known as the 'Jaif,' are renowned for their rich and luxuriant herbage. In times of quiet the studs of the Pasha, and of the Turkish authorities, with the horses of the cavalry and of the inhabitants of Mosul, are sent here to graze. Day by day they arrived in long lines. The Shemutti and Jehesh left their huts, and encamped on the greensward which surrounded the villages. The plain, as far as the eye could reach, was studded with the white pavilions of the Hytas, and the black tents of the Arabs. Picketed around them were innumerable horses in gay trappings, struggling to release themselves from the bonds which restrained them from ranging over the green pastures.

"Flowers of every hue enamelled the meadows; not thinly scattered over the grass as in northern climes, but in such thick and gathering clusters that the whole plain seemed a patchwork of many colours. The dogs, as they returned from hunting, issued from the long grass dyed red, yellow, or blue, according to the flowers through which they had last forced their way."

Some six weeks have elapsed, and the traveller thus records the change of circumstances. "The heats of summer had now commenced, and it was no longer possible to live under a white tent. The huts were equally uninhabitable, and still swarmed with vermin. In this dilemma I ordered a recess to be cut into the bank of the river, where it rose perpendicularly from the water's edge. By screening the front with reeds and boughs of trees, and covering the whole with similar materials, a small room was formed. I was much troubled, however, with scorpions and other reptiles, which issued from the earth forming the walls of my apartment; and later in the summer, by the gnats and sand-flies which hovered in a calm night over the river. . . . .The change to summer had been as rapid as that which ushered in the spring. The verdure of the plain had perished almost in a day. Hot winds, coming from the desert, had burned up and carried away the shrubs; flights of locusts, darkening the air, had destroyed the few patches of cultivation, and had completed the havoc commenced by the heat of the sun. The Abou-Salman Arabs, having struck their black tents, were now living in sheds, constructed of reeds and grass along the banks of the river. The Shemutti and Jehesh had returned to their villages; and the plain presented the same naked and desolate aspect that it had worn in the month of November. The heat, however, was now almost intolerable. Violent whirlwinds occasionally swept over the face of the country. They could be seen, as they advanced from the desert, carrying along with them clouds of sand and dust. Almost utter darkness prevailed during their passage, which lasted generally about an hour, and nothing could resist their fury. On returning home one afternoon, after a tempest of this kind, I found no traces of my dwellings; they had been completely carried away. Ponderous wooden frameworks had been borne over the bank, and hurled some hundred yards distant; the tents had disappeared, and my furniture was scattered over the plain. When on the mound, my only secure place of refuge was beneath the fallen lias, where I could defy the fury of the whirlwind: the Arabs ceased from their work and crouched in the trenches, almost suffocated, and blinded by the dense cloud of fine dust and sand, which nothing could exclude."*

* Nineveh and its Remains, i. 77, 123.

EVIL EFFECTS OF COMBINATIONS—*continued.*

THE examples of injurious effects arising from combinations among workmen have been taken principally from the cotton trade.

It will be well to notice their evil effects in some other trades.

One of the most extensive unions in the kingdom is that formed by the workmen in the building trade. In the year 1833, that body commenced operations in Manchester, Liverpool, and other towns. They dictated to their employers in every possible way; they objected to contracts being taken by them; they interfered with their engaging apprentices; they threatened to strike if any of the workmen were discharged for whatever cause, having, however, nothing to complain of on the score of wages, which had never been less than 24*s.* weekly for the last twenty years, and often a great deal more. The masters found that these demands placed such serious impediments in the way of their business, that they determined to employ no men except such as should sign a declaration that they did not belong to the trades' union. The men refused to comply, and a general turn-out ensued. For six months they persisted in the strike, when, finding the masters were still firm, the combination was forsaken by all, and they returned to their employers, requesting work on the old terms. But they had paid dear for their folly. During the best part of the year, when their labour was most in request, and their wages the highest, they had remained idle, living on the scanty allowance doled out to them from the union funds. They had hoped that their masters would have been willing and eager to employ them when the strike was at an end; but, in consequence of their refusal to work when there was work in abundance for all, many of the buildings were discontinued, and the places of some of the men were supplied by fresh labourers brought from distant parts, and also by machinery, so that the application for employment could not be granted, and thus the misery of pauperism awaited them; but, what was worse than all, their long cessation from work had produced habits of idleness, and with idleness its never-failing companion, immorality, ensued, and unmitigated evil was the result of the whole.

We now come to the subject of combinations and unions amongst colliers and miners. At this time (1847) combinations exist in some of the coal districts, by which the workmen bind themselves not to work more than a certain quantity of coal, their object being to keep up the price of coal by never having too large a stock on hand. Observe, now, the mischief which has been done to trade in general by such combinations as these amongst colliers, not to work more than a certain quantity of coal.

It happened that two leading iron-masters in Glasgow received a large order for pig-iron from Germany, on condition that it should be delivered for from 60*s.* to 65*s.* a ton. This price would have afforded a fair profit to the iron-master, and a fair rate of wages to the collier and ironstone miner, enabling them to earn from 3*s.* 6*d.* to 4*s.* a day by ten hours of reasonable labour; but, by their combination, the miners had so raised the price of the raw material, out of which the pig-iron is made, that the iron-master was obliged to charge 70*s.* or 75*s.* a ton for the iron which he ought to have been able to produce for 60*s.* to 65*s.* Now, see the consequence of this: out of one hundred furnaces in Lanarkshire fifteen were not in work at all, and others not fully employed, on account of the

high price of coal. The iron required, not having been obtained in Scotland, was made elsewhere, some in Germany itself, and some in America. Thus the trade and advantage were lost to Lanarkshire in consequence of the combination of the colliers and miners there.

Again, coal-masters are obliged, in consequence of colliers restricting their labour, to keep one-third more men in their employ, to sink one-third more pits with engines, railways, horses, &c. In addition to this increased charge, they are obliged to pay a higher price per ton for coal and ironstone on account of the diminished quantity of both being produced; and all this operates most injuriously in their competition with foreign trade and other producers both at home and abroad, where combinations do not exist. In many of the manufacturing towns of Staffordshire, in consequence of the high price of coal, trade is suffering in a very serious degree.

The principal trade of Wolverhampton, and other towns, consists in the making of hinges, bolts, nails, locks, screws, &c., the main part of the cost of which is that of the iron and the coal for working it up. Coals were in 1847 12*s.* a ton, whereas, a few years before, they were 6*s.* 6*d.*; bar iron was 10*l.*; in 1842, it was 5*l.* 5*s.* These high prices have driven a great deal of this trade to Prussia and Belgium; and screws, which used to be made almost exclusively in Staffordshire and at Birmingham, are actually imported into Birmingham from Hamburgh and Belgium. Manufacturers are often forced to stop for want of coal; and the combination of the colliers to keep up the price of coal makes it impossible for the masters to reduce their prices sufficiently to enable them to meet foreign competition. It is very sad that colliers and miners should be so blind to their own interest, and to that of the community, as thus to labour hard to destroy the very foundation of our national advantage as a manufacturing people, namely, the cheapness of iron and coal; thus encouraging foreign competition, instead of successfully combating it, and do as much as in them lies to destroy and extinguish the very trade which is their mainstay for future employment.

Fluctuation in the rate of wages of the working classes seems to be an evil which does not admit of a remedy on the part of masters, because it arises from causes over which they have no control. The great extent to which the commerce of this country has reached, and to which we owe that many thousands of persons are earning their bread in comfort and respectability, is attributable to the connexion of Great Britain with foreign countries, upon whose markets we are mainly dependent. It is out of our power to effect a regularity of demand amongst foreign nations for the commodities which we manufacture; and regularity of demand is the only thing that could insure a regularity of employment, and of wages. Alternate prosperity and depression must always be an essential feature in a widely-extended commerce.

It is impossible to foresee accurately what will be the amount of the demand for our productions on the part of foreign countries; it must therefore often happen that we have produced more than there is a demand for, and then the market is overstocked; the demand ceases for a time, and with it production must cease for a time, and labourers will be thrown out of employment, or have their wages reduced.

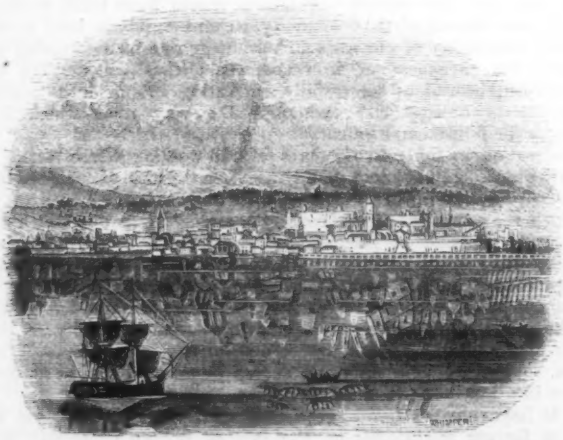
Providence has not, however, decreed that these fluctuations should fall exclusively upon the manufacturing classes of this country. We find that He has ordained that similar fluctuations take place in the natural

supplies of many other countries. The northern tribes, for instance, in the frozen regions, are subject to alternate abundance and scarcity of food.

The Indians, who live under the tropics, are during certain months deluged with rain, and during others parched with drought. We, who live in the temperate regions, owe to the mercy and goodness of God, that the vicissitudes of abundance and scarcity in the fruits of the earth are less inconveniently felt than in some other countries; but even here harvests vary, and with them varies the price of food. Since, therefore, it is impossible to prevent fluctuation, what we have to do is to provide against it. The northern tribes, above mentioned, during the time of their abundance, lay up what stores they are able, to meet their necessities in the day of scarcity. The Indians, in the rainy season, make large tanks to catch the water, and keep it against the time of drought: so in this country must we do. In the season of prosperity we must lay up against the day of adversity. Earnings, usually high whilst the demand is great, should not be squandered in folly or extravagance, in the gin-shop or the public-house; but a portion of them should be laid by for future exigencies.

That religion, of which our Lord and Saviour Jesus Christ came down to set us an example, teaches us to be self-denying, temperate, and thankful in prosperity, patient and peaceable in adversity, frugal and provident at all times: so shall we never fail.

FATA MORGANA.



In the Straits of Messina, between Sicily and the coast of Italy, a remarkable phenomenon sometimes occurs, which, from the fairy-like effect produced, is called the *Fata Morgana*, or the *Fairy* Morgana.

When the rays of the rising sun form an angle of 45° on the sea of Reggio, and when the bright surface of the water is not disturbed either by the wind or the current, a spectator placed on any high building in the city, with his back to the sun and his face to the sea, observes upon the surface

of the water superb palaces, with their balconies and windows, lofty towers, herds and flocks grazing in wooded valleys and fertile plains, armies of men on horseback and on foot, with multiplied fragments of buildings, such as columns, pilasters, and arches. These objects pass rapidly in succession along the surface of the sea during the brief period of their appearance. They are, of course, pictures of palaces and buildings actually existing on the shore, and the living objects can only be seen when they happen to form part of the general landscape.

If, at the time of these appearances, the air is loaded with vapour, or dense exhalations, the same objects which are depicted upon the sea will be seen also in the air, from near the surface of the sea to the height of about twenty-five feet. These images, however, are not so distinct as those seen in the sea. If the air be slightly hazy, as when dew is falling, the objects will be seen only on the surface of the sea, but they all appear fringed with red, yellow, and blue light, as if they were seen through a prism.

When this phenomenon, which does not often occur, is to be seen, the people of Reggio hail it with exultation and joy, running down to the sea-side, clapping their hands, and exclaiming, "Morgana! Morgana! Fata Morgana!"

Similar phenomena are not unknown in our own country. The following instance, which lately occurred in the neighbourhood of the Land's End, in Cornwall, has been thus stated to the writer by the gentleman who witnessed it. "There appeared out at sea, and where there was no land, an island, with roads leading from the shore, hills, houses, a church, and smoke, apparently coming from the chimneys of some cottages. The astonished guide at first pronounced the island to be one of the Scilly Islands, till he remembered that those islands lay in a different direction. The vision, however, gradually faded away; it was probably the picture of the shore on which the spectators were standing."

There is considerable difficulty in accounting for these appearances. The images formed in the air are produced by the unequal refraction or bending of the rays of light; and it has been supposed that the pictures seen in the sea may be the aërial images reflected from its surface, or from a stratum of dense vapour; or that they may be the direct reflections from the objects themselves.

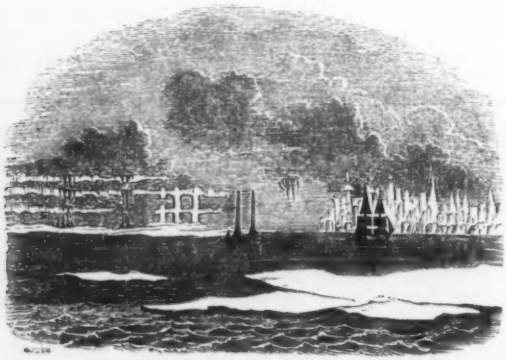
In the arctic regions, the presence of fields and other collections of floating ice is often discovered at a great distance, by a singular appearance in the horizon, called *ice-blink*. It is a band of lucid whiteness, occasioned by the glare of light reflected obliquely from the surface of the ice against the opposite atmosphere. This shining streak, which looks always brightest in clear weather, points out to the experienced navigator, twenty or thirty miles beyond the limit of direct vision, not only the extent and figure, but also the quality of the ice. The blink from ice appears of a pure white, while that occasioned by wide plains of snow has a yellowish tinge.

The ice-blink is very useful to seamen, for it often exhibits dark spots or patches, corresponding to certain openings of water, the existence of which could not otherwise be known; and when beset by ice he endeavours to make his way in their direction. The ice-blink often produces an effect called *looming*, whereby objects near the horizon appear distorted and repeated, and often lifted up into the air. On one occasion, Mr. Scoresby* having approached so near the unexplored shore of Greenland that the land appeared distinct and bold, was anxious to make a drawing of

* Now Dr. Scoresby.

it; but, on attempting to do so, he found the outline to be constantly changing. On examining the coast through a telescope, its appearance was that "of an extensive ancient city, abounding with the ruins of castles, obelisks, churches, and monuments, with other large and conspicuous buildings. Some of the hills seemed to be surmounted by turrets, battlements, spires, and pinnacles; while others, subjected to one or two reflections, exhibited large masses of rock, apparently suspended in the air, at a considerable elevation above the actual termination of the mountains to which they referred. The whole exhibition was a grand phantasmagoria. Scarcely was any portion sketched, before it changed its appearance, and assumed the form of an object totally different. It was, perhaps, alternately a castle, a cathedral, or an obelisk; then expanding horizontally, and coalescing with the adjoining hills, united the intermediate valleys, though some miles in width, by a bridge of a single arch, of the most magnificent appearance and extent. Notwithstanding these repeated changes, the various figures represented in the drawing had all the distinctness of reality; and not only the different strata, but also the veins of the rocks, with the wreaths of snow occupying ravines and fissures, formed sharp and distinct lines, and exhibited every appearance of the most perfect solidity."

On another occasion, on the same coast, Dr. Scoresby saw an inverted image of a ship in the air, and on looking at it through his telescope, he could distinguish every sail, the general rig of the ship, and its particular character: "insomuch, that I confidently pronounced it to be my father's ship, the Fame, which it afterwards proved to be; though on comparing notes with my father, I found that our relative position at the time gave a distance from one another of very nearly thirty miles, being about seventeen miles beyond the horizon, and some leagues beyond the limit of direct vision. I was so struck with the peculiarity of the circumstance, that I mentioned it to the officer of the watch, stating my full conviction, that the Fame was then cruising in the neighbouring inlet."



Looming of the Ice.

In some cases, these aërial reflections are repeated two, three, and even four times; the form of a ship, for example, appearing in the air; then, above this, the same object inverted; then the third occurs in its right position, and the fourth is inverted.

THE BLUE AND YELLOW MACAW.

PARROTS are monogamous—that is, a single male attaches himself to a single female; the eggs are deposited in the holes of decayed trees, or in the centre of the monstrous nests, so common in the tropics, formed by *Termites*, the crisp, earthy walls of which are easily chiselled away by the strong beaks of these birds. They associate in numerous flocks, whose flights from tree to tree present the most brilliant appearance, as the rays of a tropical sun glance from their gorgeous backs and wings. Their voices are loud and harsh: and of most of the species the screams have a piercing and grating character almost intolerable. Yet these are capable of wonderful modulation; the power which is possessed by many species of imitating the words of human language, the notes of vocal music, the calls of animals, and almost any sounds articulate or inarticulate, is well known; especially as developed by their extreme docility and memory, in the education of a state of captivity. This faculty is possessed by the various genera, however, in very different degrees.

Extraordinary examples of the imitative talent in these birds are on record, combined in some instances, at least, with what looks so like intelligence as to cause surprise and admiration. We quote the following interesting account from the "Gleanings" of Mr. Jesse, the more readily as that accurate observer seems, from his introductory remark, in some degree to authenticate the marvellous statement

After speaking of the renowned Parrot belonging to Colonel O'Kelly, Mr. Jesse proceeds thus :—"There is another Parrot, which is occasionally brought from Brighton to Hampton Court, that appears to equal it in intelligence and power of imitation. I had seen and heard so much of this bird, that I requested the sister of its owner to furnish me with some particulars respecting it. The following is her lively and brilliant account of it :—

'As you wished me to write down whatever I could collect about my sister's wonderful Parrot, I proceed to do so, only premising that I will tell you nothing but what I can vouch for having myself heard. Her laugh is quite extraordinary, and it is impossible to help joining in it oneself, more especially when in the midst of it she cries out, "Don't make me laugh so. I shall die, I shall die;" and then continues laughing more violently than before. Her crying and sobbing are curious; and if you say, "Poor Poll! what is the matter?" she says, "So bad! so bad! got such a cold!" and after crying for some time will gradually cease, and making a noise like drawing a long breath, say, "Better now!" and begin to laugh.

'The first time I ever heard her speak, was one day when I was talking to the maid at the bottom of the stairs, and heard what I then considered to be a child call out "Payne! (the maid's name) I am not well, I'm not well!" and on my saying, "What is the matter with that child?" she replied, "It's only the Parrot; she always does so when I leave her alone, to make me come back;" and so it proved; for on her going into the room the Parrot stopped, and then began laughing quite in a jeering way.

'It is singular enough, that whenever she is affronted in any way, she begins to cry, and when pleased, to laugh. If any one happens to cough or sneeze, she says, "What a bad cold!" One day, when the children were playing with her, the maid came into the room, and on their repeating to her several things which the Parrot had said, Poll looked up, and said quite plainly, "No, I didn't." Sometimes when she is inclined to be mischievous, the maid threatens to beat her, and she says "No, you won't." She calls the cat very plainly, saying, "Puss! puss!" and then answers *mew*: but the most amusing part is, that whenever I want to make her call it, and to that purpose say, "Puss! puss!" myself, she always answers *mew*, till I begin mewing, and then she begins calling puss as quick as possible. She imitates every kind of noise, and barks so naturally, that I have known her to set all the dogs on the parade at Hampton Court barking; and the consternation I have seen her cause in a party of cocks and hens, by her crowing and clucking, has been the most ludicrous thing possible. She sings just like a child, and I have more than once thought it was a human being; and it was ridiculous to hear her make what one should call a false note, and then say, "Oh, la!" and burst out laughing at herself, beginning again quite in another key. She is very fond of singing "Buy a broom," which she says quite plainly; but in the same spirit as in calling the cat, if we say, with a view to make her repeat it, "Buy a broom," she always says, "Buy a *brush*," and then laughs, as a child might do when mischievous. She often performs a kind of exercise, which I do not know how to describe, except by saying that it is like the lance exercise. She puts her claw behind her, first on one side and then on the other, then in front, and round over her head, and whilst doing so, keeps saying, "Come on! come on!" and, when finished, says, "Bravo! beautiful!" and draws herself up. Before I was as well acquainted with her as I am now, she would stare in my face for some time, and then say, "How d'ye do, ma'am?"

this she invariably does to strangers. One day I went into the room where she was, and said, to try her, "Poll, where is Payne gone?" and, to my astonishment, and almost dismay, she said, "Down stairs." I cannot, at this moment, recollect anything more that I can vouch for myself, and I do not choose to trust to what I am told; but from what I have myself seen and heard, she has almost made me a believer in transmigration."*

WILD FLOWERS.

WILD HYACINTH. (*Hyacinthus non-scriptus.*)

EVERY child who has wandered in the woods in the sweet months of April and May knows the Blue-Bell, or wild Hyacinth. Scarcely a copse can be found throughout our land which is not then blue with its flowers, for it is to the woodland and the green lane, in Spring, what the buttercup is to the meadow. Growing near it we often find the beautiful pinkish-white blossoms of the wood-anemone, and before it fades away the hedges are getting white, and becoming fragrant with wreaths of the blooming May,

* Gleanings, p. 218.

but the primroses have almost all departed, and the violets are daily more rare. The root of the Wild Hyacinth is round, and full of a poisonous, clammy juice; indeed every part of the plant gives out more or less of this juice if we bruise it. Though the root is unfit for food, and is useless to us now, yet in former times it was much prized. In days when very stiff ruffs were worn, the juice was made into starch, and employed to stiffen linen. It served the bookbinder, too, as glue, to fasten the covers of books. The flower has a slight scent, but the chief charms of the Blue-Bell are its beauty and its early appearance. It is but lately that we have looked upon bare trees, and ground strewed with withered leaves, and when no songs of joy were heard; and now the early flowers seem to say, in the language of Scripture, "The Winter is past; the rain is over and gone; the flowers appear on the earth; the time for the singing of birds is come; and the voice of the turtle is heard in the land." Our Wild Hyacinth is sometimes found with white or flesh-coloured flowers, but the beautiful garden Hyacinths, with double blossoms, are brought from different countries of the East.

THE PAPER KITE.

ONCE on a time a paper kite
Was mounted to a wondrous height,
Where, giddy with its elevation,
It thus expressed self-admiration:—
"See how yon crowds of gazing people
Admire my flight above the steeple;
How would they wonder if they knew
All that a kite like me can do!
Were I but free I'd take a flight,
And pierce the clouds beyond their sight;
But now, like some poor prisoner bound,
My string confines me near the ground.
I'd brave the eagle's towering wing,
Might I but fly without a string."
It tugg'd and pulled, while thus it spoke,
To break the string. At last it broke:
Depriv'd at once of all its stay,
In vain it tried to soar away.
Unable its own weight to bear,
It flutter'd downward through the air;
Unable its own course to guide,
The wind soon plung'd it in the tide.
Ah! foolish kite, thou hadst no wing,
How couldst thou fly without a string
My heart replied, O Lord, I see
How much the kite resembles me:
Forgetful that by Thee I stand,
Impatient of Thy ruling hand,
How oft I've wish'd to break the lines
Thy wisdom for my lot assigns!
How oft indulg'd a vain desire,
For something more and something higher!
And, but for love and grace Divine,
A fall thus dreadful had been mine.

JOHN NEWTON.

MULE SPINNING.

THE throstle is not often employed for very fine spinning, because fine yarn would not bear the drag of the bobbin; but in mule spinning the yarn is wound at once upon the spindles without any strain. In the mule the rolling is first drawn by the usual system of rollers, and then stretched by a moveable carriage, as in the spinning-jenny of Hargreaves. The effect of first drawing and then stretching, is to make the yarn finer and more uniform, as will be explained presently. The spinning-mule is the most interesting and impressive spectacle in a large cotton mill; on account of its vast extent, the great quantity of work performed by it, and the wonderful complication and ingenuity of its parts.

The spinning-mule consists of two principal portions; the first, which is fixed, contains the bobbins of rovings and the drawing-rollers; the second is a sort of carriage, moving upon an iron railroad, and capable of being drawn out to a distance of about five feet from the fixed frame. This carriage carries the spindles, the number of which is half that of the bobbins of rovings. Motion is given to the spindles by means of vertical drums, round which are passed slender cords, communicating with the spindles. There is one drum to every twenty-four spindles.

The carriage being run up to the point from which it starts in spinning, the spindles are near to the roller-beam: the rollers now begin to turn, and to give out yarn, which is immediately twisted by the revolution of the spindles; the carriage then moves away from the roller-beam, somewhat quicker than the threads are delivered, so that they receive a certain amount of stretching, a circumstance which gives value to this machine. The beneficial effect is produced in this way: when the thread leaves the rollers it is thicker in some parts than in others, and those thicker parts not being so much twisted as the thinner ones, are softer, and yield to the stretching power of the mule, so that the twist is equalized throughout, and the yarn becomes more uniform. When the carriage has *completed a stretch*, or is drawn out from about 54 to 64 inches from the roller-beam, the drawing-rollers cease to give out yarn, but the spindles continue to whirl until the threads are properly twisted. In spinning the finer yarns, the carriage sometimes makes what is called a *second stretch*, during which the spindles are made to revolve much more rapidly than before. The drawing, stretching, and twisting of a length of thread being thus completed, the mule disengages itself from the parts of the machinery by which it has hitherto been driven, and the spinner then pushes the carriage with his knee, back to the roller-beam, turning at the same time with his right hand a fly wheel, which gives motion to the spindles. At the same time a *copping* wire, as it is called, is pressed upon the threads by the spinner's left hand, and they are thus made to traverse the whole length of the spindle, upon which they are then wound or *built* in a conical form which is called a *cop*. These cops are used for placing in the shuttle in weaving, and form the weft, or short cross threads, of the cloth.

One man is able to attend to two mules, guiding in the carriage of one mule by hand, while the carriage of the other is being moved out by the steam-engine. Much skill is required in pushing back the carriage. As a preparatory step, the spinner causes the spindles to revolve backwards for a moment, to slacken the threads just completed, and throw them off the points of the spindles previous to winding them. In pushing the carriage back he must attend to three things:—he must guide the copping wire so as to ensure the regular winding of the yarn on the cop; he must regulate the motions of the spindles; and he must push the carriage at such a rate as to supply the exact amount of yarn that the spindles can take up in a given time.

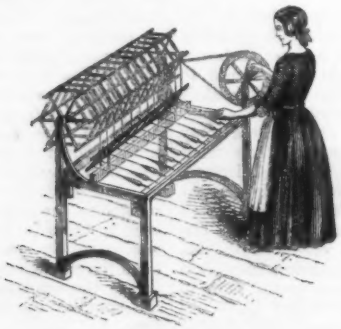
The spinner is assisted by boys or

girls to piece the broken threads. He also employs a *scavenger* to collect all the loose or waste cotton, called *fly*, which lies on the floor, or hangs about the machinery. This is chiefly used in cleaning the machinery. It is calculated that the waste of material from the different machines in spinning cotton, amounts to 1¼ oz. per lb., or nearly one-tenth of the original weight. It is the duty of the piecer to join the broken ends of the threads as the carriage moves from the upright frame. The breaking of the threads depends, in some degree, on the temperature and the state of the atmosphere. During an east wind the threads sometimes break faster than the piecers can join them; and it seems probable that the rapid whirling of so many thousand pieces of machinery produces, in very dry weather, a large amount of electricity, which may prevent the proper spinning of the fibres. At such times it is not uncommon to keep the atmosphere of the room moist, by jets of steam, and to maintain a temperature of from 68° to 76°. Indeed, fine yarn cannot well be spun at a lower temperature.

The quality of the yarn in mule-spinning depends upon the care and attention of the spinner, and it was long thought impossible to substitute mechanical contrivances for the work performed by him. This has led the spinners, on many occasions, to league together, for the purpose of compelling their masters to grant such wages as they chose to demand, and to accept such an amount of labour as they chose to give. Such acts as these, which are in direct violation of the Divine command, "Servants, be obedient to your masters," are sure, sooner or later, to meet with punishment; and such has been the case in the present instance. The mill-owners, feeling that no dependence was to be placed on their spinners, long desired to supersede them by mechanical contrivance; and this at length, after numerous failures, has been done in a complete manner by the invention of the *self-acting mule*, or the *iron man*, as it is sometimes called in Lancashire. Mr. Roberts of the celebrated firm of Sharp and Roberts, machine-makers, succeeded in perfecting this extraordinary machine, which not only does the work of the spinning-mule without the assistance or attendance of any one except the little piecer, but does it in a more perfect and complete manner; and produces a larger quantity of yarn. The cops, also, are firmer, and of better shape, and contain a much larger quantity of yarn than cops of equal size, wound by hand, so that they are less liable to injury; and in weaving, the superior firmness of the cop allows the loom to be worked at greater speed, whereby cloth of superior quality is produced in greater quantity.

REELING.

THE yarn is now disposed of in various ways, according to the use for which



REELING.

it is intended: but it is often found convenient to make it up into hanks.

The machine for winding the yarn from the bobbins, or cops, into regular hanks, is a long eight-sided frame, mounted on a carriage, which is also furnished with spindles or skewers, for holding the bobbins, or cops. These frames are managed by young women, whose duty it is to turn the reel until a check is struck. They then know that the reel has made eighty turns; and, as the sides of the reel measure one yard and a half, a *ley* or *rap* is thus formed, containing 120 yards. Seven of these raps make one hank, containing 560 threads of a yard-and-a-half each; thus making 840 yards to the hank. The size of the yarn is ascertained by weighing the hanks in a kind of balance called a quadrant.* Each size is put up separately in cubical bundles of five or ten pounds weight. These packages are closely compressed by a simple but ingenious machine called the *bundling-press*, where they are firmly tied while under pressure, and, being wrapped neatly in paper, are ready for the market. The usual average number of hanks to the pound is, for coarse spinning, from ten to forty, but, for some purposes, such as candle-wicks, coarse counterpanes, &c., as low as two hanks to the pound are made. It is often exported as low as from four to six hanks. The highest number usually obtained in fine spinning is 300, but the writer saw at Mr. Houldsworth's mill, at Manchester, yarn of which 460 hanks were required to make a pound. This yarn is a beautiful, hard, cylindrical cord, of wonderful fineness, and has been sold for *twenty guineas*, or upwards, a pound, an astonishing example of the effect of well-directed industry, in increasing the value of raw material. A pound of the best Sea-Island cotton is worth, at the highest price, 5*s.* per pound; when manufactured into yarn of the number 460, the value of this pound of cotton is 420*s.*, or in other words its value is increased 84 times. This yarn was produced by Mr. Houldsworth for a muslin dress for Her present Majesty, in order to show the capabilities of the British manufacture, far excelling anything produced by the Hindoo spinner. It is scarcely necessary to say, that such yarn is not commonly made, but that, if a demand for it were to arise, it could be supplied at a gradually decreasing price.

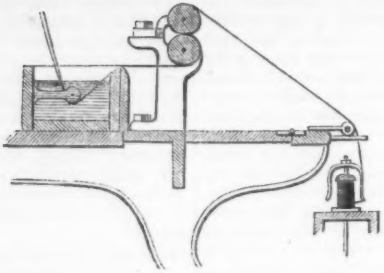
* Tables are published for ascertaining the number of hanks to the pound; but the following is not an uncommon mode of ascertaining. 1,000 grains divided by the number of grains in a ley, gives the number of hanks per pound. This rule is founded on the fact that a ley is $\frac{1}{4}$th of a hank; and 1,000 grains is equal to $\frac{1}{4}$th of a pound.

THE MANUFACTURE OF SEWING THREAD.

When the yarn is completed, it is usually sent to the *doubling and twisting mill*, for the purpose of being converted into what is now properly called thread. Although we are accustomed to apply the word *thread* to a thin, narrow line of any fibrous material, the manufacturer limits the term to that compound cord produced by doubling or twisting two or more single lines. The single line he calls *yarn*: two or more single yarns laid parallel, and twisted together, he calls *thread*; and of this there are many varieties, such as *bobbin-net-lace thread*, *stocking thread*, *sewing thread*, &c.

The writer visited a sewing-thread factory at Manchester, which, though inferior in extent and importance to the cotton mills, where the raw material is converted into yarn, presents, nevertheless, several points of interest.

The yarn, which is received at the factory in the form of cops, is wound upon large bobbins, ready for the doubling-mill, or *thread-frame*, as it is sometimes called. This machine is not unlike the throstle of the cotton-spinner, already described; but its action will be better understood by reference to the following cut. The cops are mounted loosely upon spindle or skewers, on a *creel* or shelf extending the whole length of the room; as the yarn is unwound, it is led across a glass rod, and made to pass into a leaden trough filled with water, or a weak solution of starch, which enables the lines of yarn to twist together into a more solid thread. On quitting the trough, the lines of yarn (two, three, four, or six in number, according to the desired size of the thread) are guided over a roller whereon they



are laid parallel, and then made to pass down to the spindle, the rapid revolutions of which twist these parallel lines together into a solid cord or thread. The twist is given in an opposite direction to that applied by the spinning-machine, and when the thread is completed, it is then wound upon the bobbin which surrounds the spindle.

The thread is now wound into hanks for bleaching or dyeing (two important processes, which we may notice in a future Number). The hanks of bleached or dyed thread are wound on bobbins, for the purpose of *balling* or *reeling*. The process of forming the thread into balls or reels, is performed by young women with an almost magical celerity. Each young woman is seated at a kind of turning-lathe; she seizes the end of the thread, and

BALLING AND REELING.

attaches it to a rod of steel, sets this spinning, and in an instant a ball of cotton appears at the end of the rod; the rotation is stopped, a blue ticket is inserted at the end, a further quantity of thread wound to secure the ticket, and the ball is finished. The size of the ball is regulated with extreme accuracy by the eye. The number of balls to the pound varies from 16 to 600; and the young woman being told to produce a certain number to the pound, makes a few, weighs them until she has got the exact size by weight: after this she relies entirely upon her eye; and so accurate is her judgment, that the variation of the balls in weight is very trifling. The cotton is wound on reels with the same surprising celerity; the steel finger which delivers the thread from the bobbin, being guided to and fro to distribute it equally along the barrel of the reel. The quantity here also is judged of by

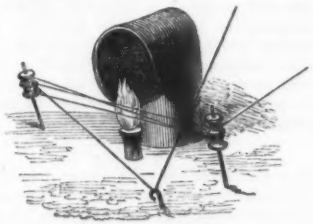
eye, and varies from 30 to 300 yards in each reel. As each reel is filled, the broken end of the thread is inserted in a notch, which the winder cuts for the purpose. Reeling is not such rapid work as balling, but is still sufficiently swift to prevent the eye from following the motion of the thread. The chief delay in both cases arises from the breaking of the thread, which during the writer's visit, occurred rather often.

The reels are placed on end in a kind of shallow drawer, and little children cut out and paste on the labels. These labels are printed on sheets, and the back of each sheet is covered with gum, like the postage-stamps. The children stamp out the labels with a circular punch, wet the back of each against the tongue, and then press the wetted side against the end of the reel. Some idea may be formed of the extent of this business, from the fact, that a sheet, containing 144 labels, printed in blue and gold, and glazed, and then covered on the back with a layer of gum, is sold for one penny. The smallest bronzed cotton bobbin labels are sold as low as one halfpenny per gross. The writer paid a visit to the extensive establishment of Messrs. Bradshaw and Blacklock, of Manchester, where these labels are produced in large quantities. Each sheet, which is of a purple colour on one side, and plain on the other, is first printed from a copper-plate in an invisible adhesive ink; the sheet, immediately it is printed, is taken by a boy, who rubs over it, with a hare's foot, a yellow impalpable metallic powder, which passes for gold, but is really copper or bronze in a minutely divided state. The powder adheres to the printed letters and border, and is brushed off from the parts where no ink has been applied. The sheets, when perfectly dry, are hot-pressed, or calendered, which gives the glossy surface, and then covered on the plain surface with gum; when this is thoroughly dry, the sheets are pressed again, and are then ready for sale. Letter-press and copper-plate printing, as well as lithography, are all extensively used in producing labels and tickets.

The balls of cotton are tied up in small flat bundles, each containing a quarter of a pound; the proper number is counted out, folded up in paper, and tied into a bundle, with the remarkable speed and precision which are attained only by long practice: four of these quarters are next tied up into pound parcels, which, after being labelled, are ready for the wholesale market.

SINGEING THE THREAD.

In fine spinning, the yarn, when doubled, is, for some purposes, *singed* or *gassed*, in order to get rid of the loose fibres, and to make it more level and compact. The process of singeing yarn strikes a stranger as being more remarkable than anything else in the mill. In a long room in the upper part of the mill, or in a shed attached to it, are several tables, lighted up with a large number of jets of flame, about twelve inches apart, producing a singular but pleasing effect. Above each flame is a little hood or chimney.



Gassing the Yarn.

On entering this room the smell of the burnt cotton is immediately perceived, and, on approaching the table, one is surprised to see a fine, delicate thread crossing each flame in two or three directions, and apparently at rest; but, on following the course of this thread, it is found to proceed from one bobbin, which is rapidly spinning round, and to pass through the flame to another bobbin, which is also in rapid motion. It is then seen that the thread is also moving at a rapid rate, by which means alone does it escape being consumed. The thread is led over pulleys, so as to pass two or three times through the flame, which singes off the loose fibres, converting them into a reddish powder or dust, which, if blown about and inhaled, would do great injury to the lungs: this is why the gassing-room is in a remote or retired part of the building, to prevent the air being dis-

turbed by the bustle of the busier parts.

After the thread has been singed, it passes over a brush, to clean it, and then through a small hole or notch cut in a projecting piece of brass, which is ingeniously made to detect any knot or foul point in the thread. The hole is so small, that there is but just room for the thread to pass; if, therefore, a knot or other impediment occurs in the thread, the piece of brass is depressed, and this is connected with mechanism which suddenly turns the gas flame aside, and lifts the bobbin off the rotating barrel which turns it, causing the whole to stop. The thread remains at rest until the attendant, called the *tenter woman*, mends the defect, and sets the bobbin in motion again. The advantage of this contrivance is, that no time is lost; for, while the defective thread stops, all the rest go on as usual. The effect of singeing is to raise the yarns to a higher number, by the diminution of their weight per hank. Thus, No. 90 will become No. 95; so that there is an actual difference of five hanks per pound by the operation of gassing.

STATISTICS.

THE statistics of the cotton trade will be better understood, when the important subjects of weaving, bleaching, dyeing, and printing, are completed; but a few details respecting cotton-wool, yarn, and thread, may be interesting in this place. The amount of cotton-wool imported into England in 1845, amounted to 659,584,477 lbs., of which, 44,363,355 lbs. were exported, leaving a quantity for home consumption, amounting to 615,221,122 lbs. By far the greater part of this supply came from the United States of America. For some years past, the cotton wool imported from foreign possessions paid an import duty of 2*s.* 11*d.* per cwt.; that from British possessions paid only 4*d.* per cwt. From the 22nd of March 1845, this duty was wholly repealed.

In 1845, the prices of cotton-wool at Liverpool were as follows:—Sea-Island cotton-wool from 10½*d.* to 16*d.* per lb.; Uplands, 5½*d.* to 4½*d.*; Orleans, 5¼*d.* to 6*d.*; Egyptian, 5½*d.* to 10*d.*; common West Indian, 4*d.* to 5*d.*; Surat and Madras, 2½*d.* to 3½*d.*

The quantity of cotton-yarn spun in England and Scotland in 1845, was as follows:—

	lbs.
In England . . .	467,029,465
In Scotland . . .	27,737,022
Total	494,766,487

The quantity of cotton-yarn exported from England in 1845, amounted to 131,937,935 lbs. Of this quantity, the principal portions were distributed as follows:—

	lbs.
The Hanse Towns, &c.	40,315,592
Holland	21,556,043
Russia	18,167,962
India	14,116,237
China	2,402,750
Sardinia, Tuscany, &c.	4,482,539
Belgium	3,917,267

The remainder was sent in much smaller quantities to various parts of the world.

The quantity of cotton-thread exported in 1845, amounted to 2,567,705 lbs.

The total weight of yarn in manufactured cotton-goods exported from England in 1845, amounted to 336,866,327 lbs.; the total value of which was £22,063,898.*

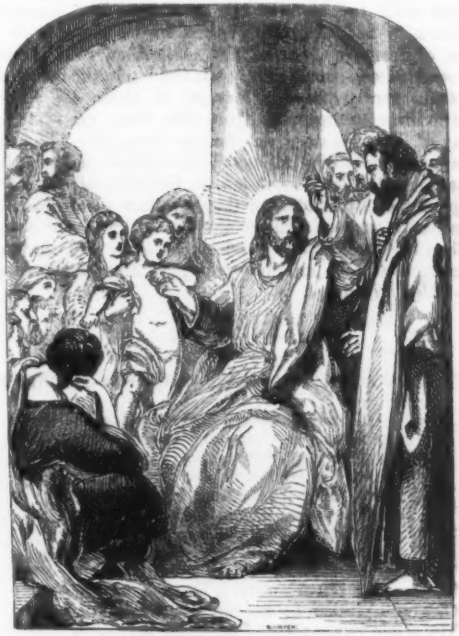
Much has been said respecting the health of the operatives in cotton mills. Children under thirteen years of age are now under the protection of the legislature; they are allowed to work only half time, that is, six hours a-day; and they must attend school during some portion of the day. An excellent school, frequently under the inspection of the Committee of Council on Education, is attached to a large number of factories; and unless the children attend this every day, they are not allowed to work in the mill. It is generally arranged that those children who work during the morning attend school in the afternoon, while those that work in the afternoon go to school in the morning.

The writer was agreeably disappointed to find that the work-people in the mills had by no means that sickly appearance which he had been led to expect. On the contrary, many of the younger females were stout,

* The above statistical facts are stated on the authority of *Burn's Commercial Glance*, Manchester, 1846.

healthy-looking girls, and others, though not ruddy, were lively and active in their movements, and in their expression of countenance. There were no symptoms of suffering or disease among the young people in any of the mills visited by the writer. Perhaps the most trying operations in the cotton-mill are *willowing*, *batting*, and *carding*. The rooms in which they are carried on are clouded with fine particles of cotton, which sometimes set a stranger coughing immediately on entering: this is probably injurious to the work-people. Most of the men in these rooms were pallid in their complexions, and, though from habit they are not subject to the same inconvenience and difficulty of breathing which strangers suffer, there are evident marks of a languid state of health in the countenances of some. In judging from their appearance, however, it is necessary to make due allowance for an artificial whiteness, produced by the particles of cotton, which settle abundantly on their faces and hair.

CHRIST RECEIVETH LITTLE CHILDREN.



THEY brought young children to Christ: Mark x. 13.

Whatever argument this Scripture may be for the baptism of infants, it shows plainly how eager parents were, at the time, to gain every spiritual benefit for their young children. They desired that their children might be *touched* by a Holy Man, not thinking he would take them up in his arms.

It appears from the account of the other Evangelists, that Christ took a child in his arms as an *emblem* of innocence, in order to teach his disciples

how simple and free from guile they ought to be—children in *malice*, though men in understanding; but St. Mark's account gives more idea of our Saviour's attending to the children themselves. Why might not our Lord both feel a kind concern for the children, and take occasion from them to inculcate godly sincerity and simplicity? if his feelings were lively, his moral would be strong.

He admitted them to no *covenant*, but he blessed them affectionately, holding them in his arms: his benediction, surely, must be some *spiritual* good. My reason dare scarcely make an argument from this interesting scene, but when I contemplate it, I always wish myself a painter, that I might give a lasting representation of it. What an attitude might not that of Jesus be! What a countenance, looking down, with a mild and gracious benevolence, on the infant in his arms! expressing a deep knowledge of what was in man! Other children, of different ages and characters, grouped in various employments; the officious disciples, with ill-grounded apprehensions and needless importance, endeavouring to disperse them; the mother of the child in our Saviour's arms, near him, expressing, as one principal figure, in her face and gesture, suspense and hope, not without some degree of fear—joy, refined and meliorated with parental affection and piety: other parents, some mildly triumphing in the benediction already received, others gently pressing forward to attain it! Though reason may scruple to draw an argument from this scene, yet who that performs the ceremony of Baptism does not feel its efficacy? The infant in one's arms excites a sentiment of tenderness; the Gospel has been just read, the ceremony becomes, to the imagination, an imitation of the benevolence of Him who appointed it. And then this Scripture pleads to the heart more forcibly than any coarse audible eloquence: it even convinces more intimately than the logic of any precise reasoners, who, by too great stiffness in adhering to what is minutely right, are often found substantially in the wrong.—*Hey's Lectures.*

ON THE MASSACRE OF THE WALDENSES IN PIEDMONT.*

Avenge, O Lord, thy slaughter'd saints, whose bones
Lie scatter'd on the Alpine mountains cold;
Ev'n them who kept thy truth so pure of old,
When all our fathers worshipp'd stocks and stones,
Forget not; in thy book record their groans
Who were thy sheep, and in their ancient fold,
Slain by the bloody Piedmontese, that roll'd
Mother with infant down the rocks. Their moans
The vales redoubled to the hills, and they
To Heaven. Their martyr'd blood and ashes sow
O'er all th' Italian fields, where still doth sway
The triple tyrant: that from these may grow
A hundredfold, who having learn'd thy way
Early may fly the Babylonian woe.

MILTON.

* The massacre of these simple and unoffending people excited general indignation in Protestant Europe. Cromwell wrote an energetic letter to the Duke of Savoy on the subject.